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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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08/384,456 02/02/95 PERSSON

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W.D. N. EXAMINER

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ART UNIT PAPER NUMBER

2611

30

DATE MAILED:

08/21/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 5/30/96

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 03 mos month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-48 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-48 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of Reference Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449. Paper No(s) 10

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

-- SEE OFFICE ACTION ON THE FOLLOWING PAGES --

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DETAILED ACTION

1. This office action is in response to applicant's amendment filed 05/30/96. Claims 1-48 are now pending in this application. This office action is made non-final.

Information Disclosure Statement

2. As requested by applicant, a form PTO-1449 is now resubmitted.

Oath/Declaration

3. The new Oath or Declaration filed 05/30/96 is acceptable.

Specification

4. The disclosure is objected to because of the following informalities: the office's database shows that the U.S. Patent Application Serial No. 07/868,865 does not match with its title "Calling channel in CDMA Communications system" as disclosed in the present specification, page 7, lines 15-17. Applicant, in the next response, is required to provide a correct Serial Number of the mentioned-above application. Appropriate correction is required.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

6. Claims 14 and 15 are rejected under 35 U.S.C. § 102(e) as being anticipated by Blakeney, II et al (hereinafter simply referred to as Blakeney).

As to claim 14, see Blakeney, figure 1, numerals 12, 14, 16 for "first and second base stations"; numeral 18 for "remote unit". See figure 2, numeral 34 for "signal processing means"; numeral 34 for "analog to digital conversion means" (also see column 12, lines 61-63); numerals 46, 40, 42 for "CDMA processing means"; numerals 50, 52 for "encoder means"; numerals 38, 36, 30 for "CDMA transmitting means".

As to claim 15, with respect to an "access code", see Blakeney, column 26, lines 59-66, with respect to "base station code", and "traffic channel code", see Blakeney, column 19, lines 24-42.

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7. Claims 23-48 are rejected under 35 U.S.C. § 102(e) as being anticipated by Gudmundson (U.S. Patent No. 5,295,153).

As to claims 23, 36, Gudmundson discloses the claimed limitations (see column 3, lines 43-68).

As to claims 24-29, 37-41, Gudmundson discloses the claimed limitations (see column 3, lines 53-68, column 5, lines 4-22).

As to claims 30-35, 42-46, Gudmundson discloses the claimed limitations (see column 3, lines 53-68, column 5, lines 30-45).

As to claim 47, Gudmundson discloses the claimed limitation (see column 3, lines 53-68).

As to claim 48, Gudmundson discloses the claimed limitation (see column 5, 14-18).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

9. Claims 2, 7-9, 16-17 are rejected under 35 U.S.C. § 103 as being unpatentable over Blakeney in view of Falconer et al (U.S. Patent No. 5,159,608, hereinafter simply referred to as Falconer).

As to claim 7, Blakeney discloses a cellular telephone system comprising steps of "decoding at the mobile station" (see column 13, lines 35-65; column 27, lines 11-47), "transmitting a signal from said mobile station the signal strength indications" (see column 4, lines 1-14; column 27, lines 15-39), "receiving the signal strength indications at one of the base stations" (see column 4, lines 5-10), "processing the indicated signal strengths at the network controller" (see column 14, lines 10-14).

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Blakeney fails to disclose that each of the transmitted signals is encoded with a different "scrambling code". In an analogous art, Falconer teaches a CDMA system in which each of the transmitted signal is encoded with a unique scrambling code, so that it will completely eliminate cross talk and make it very difficult and costly to eavesdrop or track calls (see column 6, lines 47-52). Therefore, it would have been obvious to one of ordinary skill in the art to provide the teaching of "unique scrambling code" in Falconer to Blakeney, in order to completely eliminate cross talk and to make it very difficult and costly to eavesdrop or track calls (as suggested by Falconer).

As to claim 2, the rejection to claim 7 above is hereby incorporated as reference. With respect to the claimed limitation that the second base station receives the transfer indication from the first base station (instead, the above transfer indication is generated from the "network controller" in Blakeney's reference as recited on column 3, lines 62-68). However, those skilled in the art would have appreciated that in Blakeney's reference the second base station could receive the transfer indication from either the first base station or network controller. In addition, if the transfer indication is transmitted from the base station instead of network controller, less work is going to be done at the network

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controller. Therefore, it would have been obvious to one of ordinary skill in the art to modify Blakeney reference as recited in the claim, because it would reduce the cost of implementing the network controller. With respect to the claimed limitation that the first and second base stations employ different carrier frequencies, it would be appreciated by those skilled in the art that if a minimum frequency bandwidth or a non-interrupted handoff is preferred in Blakeney's invention, then the first and second base stations should use the same carrier frequency. Otherwise, if a minimum frequency interference is preferred or one of the two base stations can not provide signals for the mobile station on the frequency employed by another base station, then the different carrier frequencies should be incorporated. Therefore, it would have been obvious to one of ordinary skill to modify Blakeney's reference as recited in the claim, because the frequency interference would be greatly reduced.

As to claim 8, with respect to an "access code", see Blakeney, column 26, lines 59-66.

As to claim 9, with respect to "base station code", and "traffic channel code", see Blakeney, column 19, lines 24-42.

As to claims 16-17, since Falconer teaches encoding an unique scrambling code for each transmitted signal, Blakeney as modified

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by Dent would read on the claimed limitation "the first and second scrambling codes have different numeric values".

10. Claims 1, 3-6, 10-13 are rejected under 35 U.S.C. § 103 as being unpatentable over Blakeney.

As to claims 1, 10, Blakeney discloses a **soft** handoff apparatus and method comprising limitations of "first and second base stations" (see base stations A and B of figures 8-9); "mobile station" 18 (figure 1); "network controller" 10 (figure 1); "first frequency" (see column 6, lines 6-8), "first code and second code" (see column 6, lines 17-20 for different code phase offsets, see also column 19, lines 25-35); "demodulated first and second signals" (see blocks 42-40 of figure 2, column 13, lines 35-65; column 27, lines 11-12); "signal processing means" 46 (figure 2); "CDMA processing means" 46 (figure 2), "first and traffic signals" (see column lines 23-35), "control message" (see column 19 for hand-off direction message, in-traffic message).

Blakeney fails to disclose that the second base station receives the transfer indication from the first base station (instead, the above transfer indication is generated from the "network controller" in Blakeney's reference as recited on column 3, lines 62-68). However, those skilled in the art would have

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appreciated that in Blakeney's reference the second base station could receive the transfer indication from either the first base station or network controller. In addition, if the transfer indication is transmitted from the base station instead of network controller, less work is going to be done at the network controller. Therefore, it would have been obvious to one of ordinary skill in the art to modify Blakeney reference as recited in the claim, because it would reduce the cost of implementing the network controller.

As to claim 3, with respect a "first base station code", a "first access code", a "second base station code" and a "second access code", see Blakeney, column 6, lines 23-27; column 19, lines 24-27.

As to claims 11-13, with respect to a "traffic channel code", see Blakeney, column 19, lines 3-10, 31-35, 60-64.

As to claims 4-6, Blakeney discloses limitations of "error correcting the demodulation signals" (see column 13, lines 62-65, "diversity combination" (see column 13, lines 54-65).

11. Claims 18-22 are rejected under 35 U.S.C. § 103 as being unpatentable over Blakeney in view of Dent (U.S. Patent No. 5,218,619), or Dent (U.S. Patent No. 5,430,760), or Dent (U.S.

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Patent No. 5,239,557), or Dent et al (U.S. Patent No. 5,353,352), or Gudmundson et al (U.S. Patent No. 5,295,152), or Gudmundson et al (U.S. Patent No. 5,295,153), or Bottomley et al (U.S. Patent No. 5,237,586).

Since the claimed subject matter of the subtractive demodulator is disclosed by several mentioned-above U.S. Patents, the pending claims 18-22 in this case are rejected over Blakeney in view of each of the mentioned-above U.S. Patents. For the purpose of simplicity, only the rejection over Blakeney in view of Gudmundson (U.S. Patent No. 5,295,153) is shown below. The rejections over Blakeney in view of each of the remaining mentioned-above U.S. Patents are discussed with the same reasons.

As to claim 18, Blakeney discloses a **soft** handoff apparatus and method comprising limitations of "first and second base stations" (see base stations A and B of figures 8-9); "mobile station" 18 (figure 1); "network controller" 10 (figure 1); "first code and second code" (see column 6, lines 17-20 for different code phase offsets, see also column 19, lines 25-35); "demodulated first and second signals" (see blocks 42-40 of figure 2, column 13, lines 35-65; column 27, lines 11-12); "signal processing means" 46 (figure 2); "CDMA processing means" 46 (figure 2), "first and

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traffic signals" (see column lines 23-35), "control message" (see column 19 for hand-off direction message, in-traffic message).

Blakeney fails to disclose that the second base station receives the transfer indication from the first base station (instead, the above transfer indication is generated from the "network controller" in Blakeney's reference as recited on column 3, lines 62-68). However, those skilled in the art would have appreciated that in Blakeney's reference the second base station could receive the transfer indication from either the first base station or network controller. In addition, if the transfer indication is transmitted from the base station instead of network controller, less work is going to be done at the network controller. Therefore, it would have been obvious to one of ordinary skill in the art to modify Blakeney reference as recited in the claim, because it would reduce the cost of implementing the network controller.

Blakeney further fails to disclose demodulating, in an order of strongest to weakest signal strength, the first and second signals transmitted from the first and second base stations. In an analogous art, Gudmundson teaches a CDMA system employing CDMA subtractive demodulation in which the received composite signal is decoded in the order of strongest to weakest signal strength so

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that the signal decoding can be carried out efficiently and accurately (see column 3, lines 53-68, column 5, lines 59-62). Therefore, it would have been obvious to one of ordinary skill in the art to provide the teaching of "CDMA subtractive demodulation" in Gudmundson to Blakeney, in order to carry out the signal decoding efficiently and accurately (as suggested by Gudmundson).

As to claim 19, because Gudmundson utilizes "subtractive demodulation", Blakeney as modified by Gudmundson would read on the claimed subtracting step.

As to claims 20-22, the modified Blakeney fails to disclose the power adjustment at the base stations and mobile station as claimed. However, the Examiner takes Official Notice that such a power adjustment is known in the art so that disturbing ongoing traffic will be avoided (as described by the present specification, page 10, lines 1-7). Therefore, it would have been obvious to one of ordinary skill in the art to provide the conventional power adjustment to the modified Blakeney, in order to avoid disturbing ongoing traffic.

Response to Amendment

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12. Applicant's arguments with respect to claims 1-48 have been considered but are deemed to be moot in view of the new grounds of rejection.

Response to applicant's remarks regarding the objection to the specification and rejection to claims 23-48 under 35 U.S.C. 112, first paragraph:

The examiner finds applicant's argument persuasive. Accordingly, the objection and rejection under 35 U.S.C. 112, first paragraph, as set forth in the previous office action, are now withdrawn in this office action.

Response to applicant's remarks regarding the rejection to claims 14 and 15:

With respect to claim 14, applicant argues that the cited Blakeney discloses the provision of a single demodulated signal produced by diversity combining the signals received from two base stations. From that, applicant goes to the conclusion that Blakeney fails to disclose generation of two demodulated signals, wherein each signal is associated with each of the two base stations. The examiner, however, disagrees with applicant's position. Although Blakeney discloses diversity combining two signals received from two base stations, these two signals, before they are combined, do read on the claimed first and second

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demodulated signals. In addition, it should be noted that the present invention also discloses the provision of a single demodulated signal produced by **diversity combining** the signals received from two base stations (see the present specification, page 3, lines 31-37, page 12, lines 1-4). Worded differently, **the diversity feature as disclosed in the present invention is the same as that of Blakeney.**

With respect to claim 15, applicant argues that the "base station identifications" in Blakeney are not used to obtain demodulated signals. The examiner, however, disagrees with applicant's position. Blakeney does disclose decoding the numerical values using the first and second codes to obtain demodulated data signals received from the first and second base stations. Applicants' attention is directed to column 12, line 61 to column 13, line 21. In this case, the claimed "numerical values" broadly read on the digitized signal output from the A/D converter included in the receiver 34 (see column 12, lines 61-68), and the claimed "first and second codes" read on the PN sequences in the receivers 40 and 42 (see column 13, lines 1-21). **Since each of the PN sequences is associated with a base station, the "base station identifications" in Blakeney do read on the first and second codes as claimed.**

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Response to applicant's remarks regarding the rejection to claims 2, 7-9 and 16-22:

Since applicant now claims priority from the earlier filed application (U.S. Patent No. 5,151,919 granted to Dent), the rejection to claims 2, 7-9 and 16-22 over Blakeney in view of Dent, as set forth in the previous office action, is now withdrawn.

Response to applicant's remarks regarding the rejection to claims 1, 3-6, and 10-13:

In response to applicant's remarks in this section, the examiner's remarks with respect to claims 14-15 above and claim 1 as set forth in the previous office action are hereby incorporated by reference.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Vo, whose telephone number is (703) 308-6728. The Examiner can normally be reached on Tuesday-Friday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Monday.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Nguyen Vo
August 17, 1996

NGUYEN VO
PATENT EXAMINER
GROUP 2600

